

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

Claim 1. (Currently Amended)

A medical location system comprising:
a medical device having a body;
a position sensor at a portion of the body, the position sensor having a core made of a Wiegand effect material; and a winding circumferentially positioned around the core, the position sensor providing signals that are used to determine temperature at the position sensor and are used to determine location information of the portion of the body of the medical device; and a signal processor having a temperature sensitivity algorithm and a location algorithm and, which is coupled to receive the signals from the position sensor, the signal processor determining a temperature at the position sensor using the temperature sensitivity algorithm and location information of the portion of the body of the medical device based on the signals received from the position sensor using the location algorithm.

Claim 2. (Previously Presented)

The medical location system according to Claim 1, wherein the location information comprises position coordinates.

Claim 3. (Previously Presented)

The medical location system according to Claim 2, wherein the location information further comprises orientation coordinates.

- Claim 4. (Previously Presented) The medical location system according to Claim 1, wherein the signal processor determines the location information with accuracy of ≤ 1 mm at temperatures greater than 75°C.
- Claim 5. (Previously Presented) The medical location system according to Claim 4, wherein the signal processor determines the location information with accuracy of ≤ 1 mm at temperatures at approximately 80°C.
- Claim 6. (Previously Presented) The medical location system according to Claim 1, wherein the core has an outer diameter less than approximately 0.3mm.
- Claim 7. (Previously Presented) The medical location system according to Claim 6, wherein the core has an outer diameter of about 0.25mm.
- Claim 8. (Previously Presented) The medical location system according to Claim 7, wherein the winding is attached to the core.
- Claim 9. (Previously Presented) The medical location system according to Claim 8, wherein a combination of the core and the wire winding has an outer diameter less than approximately 0.5mm.
- Claim 10. (Previously Presented) The medical location system according to Claim 9, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.

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- Claim 11. (Previously Presented) The medical location system according to Claim 10, wherein the material of the core comprises cobalt.
- Claim 12. (Previously Presented) The medical location system according to Claim 11, wherein the material of the core further comprises vanadium.
- Claim 13. (Previously Presented) The medical location system according to Claim 12, wherein the material of the core further comprises iron.
- Claim 14. (Previously Presented) The medical location system according to Claim 13, wherein the material of the core comprises approximately 20%-80% cobalt.
- Claim 15. (Previously Presented) The medical location system according to Claim 13, wherein the material of the core comprises approximately 2%-20% vanadium.
- Claim 16. (Previously Presented) The medical location system according to Claim 13, wherein the material of the core comprises approximately 25%-50% iron.
- Claim 17. (Previously Presented) The medical location system according to Claim 13, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.
- Claim 18. (Previously Presented) The medical location system according to Claim 8, wherein the winding is made of copper.

- Claim 19. (Previously Presented) The medical location system according to Claim 3, wherein the position sensor has an accuracy within approximately 0.5 mm.
- Claim 20. (Currently Amended) A medical location system comprising:
a medical device having a body;
a position sensor at a portion of the body, the position sensor having a core made of a high permeable material, the material being a bi-stable magnetic material that produces a substantially uniform voltage pulse upon an application of an external field, the position sensor providing signals that are used to determine location information of the portion of the body and are used to determine temperature at the position sensor; and
a signal processor having a temperature sensitivity algorithm and a location algorithm and, which is coupled to receive the signals from the position sensor, the signal processor determining a temperature at the position sensor using the temperature sensitivity algorithm and location information of the portion of the body of the medical device based on the signals received from the position sensor using the location algorithm.
- Claim 21. (Previously Presented) The medical location system according to Claim 20, further comprising a winding circumferentially positioned around the core.
- Claim 22. (Previously Presented) The medical location system according to Claim 20, wherein the location information comprises position coordinates.

- Claim 23. (Previously Presented) The medical location system according to Claim 22, wherein the location information further comprises orientation coordinates.
- Claim 24. (Previously Presented) The medical location system according to Claim 20, wherein the signal processor determines the location information with accuracy of ≤ 1 mm at temperatures greater than 75°C.
- Claim 25. (Previously Presented) The medical location system according to Claim 24, wherein the signal processor determines the location information with accuracy of ≤ 1 mm at temperatures at approximately 80°C.
- Claim 26. (Previously Presented) The medical location system according to Claim 20, wherein the core has an outer diameter less than approximately 0.3mm.
- Claim 27. (Previously Presented) The medical location system according to Claim 26, wherein the core has an outer diameter of about 0.25mm.
- Claim 28. (Previously Presented) The medical location system according to Claim 27, wherein the position sensor comprises a winding, wherein the winding is attached to the core.

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- Claim 29. (Previously Presented) The medical location system according to Claim 28, wherein a combination of the core and the winding has an outer diameter less than approximately 0.5mm.
- Claim 30. (Previously Presented) The medical location system according to Claim 29, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.
- Claim 31. (Previously Presented) The medical location system according to Claim 30, wherein the material of the core comprises cobalt.
- Claim 32. (Previously Presented) The medical location system according to Claim 31, wherein the material of the core further comprises vanadium.
- Claim 33. (Previously Presented) The medical location system according to Claim 32, wherein the material of the core further comprises iron.
- Claim 34. (Previously Presented) The medical location system according to Claim 33, wherein the material of the core comprises approximately 20%-80% cobalt.
- Claim 35. (Previously Presented) The medical location system according to Claim 33, wherein the material of the core comprises approximately 2%-20% vanadium.
- Claim 36. (Previously Presented) The medical location system according to Claim 33, wherein the material of the core comprises approximately 25%-50% iron.

- Claim 37. (Previously Presented) The medical location system according to Claim 33, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.
- Claim 38. (Previously Presented) The medical location system according to Claim 28, wherein the winding is made of copper.
- Claim 39. (Previously Presented) The medical location system according to Claim 23, wherein the position sensor has an accuracy within approximately 0.5 mm.
- Claim 40. (Previously Presented) The medical location system according to Claim 20, wherein the material of the core comprises a copper, nickel and iron alloy (CuNiFe).
- Claim 41. (Previously Presented) The medical location system according to Claim 20, wherein the material of the core comprises an iron, chrome and cobalt alloy.
- Claim 42. (Previously Presented) The medical location system according to Claim 1, wherein the signal processor senses a variation in an electrical characteristic of the winding, and determines the temperature of the position sensor responsively to the variation.
- Claim 43. (Previously Presented) The medical location system according to Claim 42, wherein the electrical characteristic comprises a resistance.
- Claim 44. (Previously Presented) The medical location system according to Claim 20, wherein the signal processor senses a

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variation in an electrical characteristic of the position sensor, and determines the temperature of the position sensor responsively to the variation.